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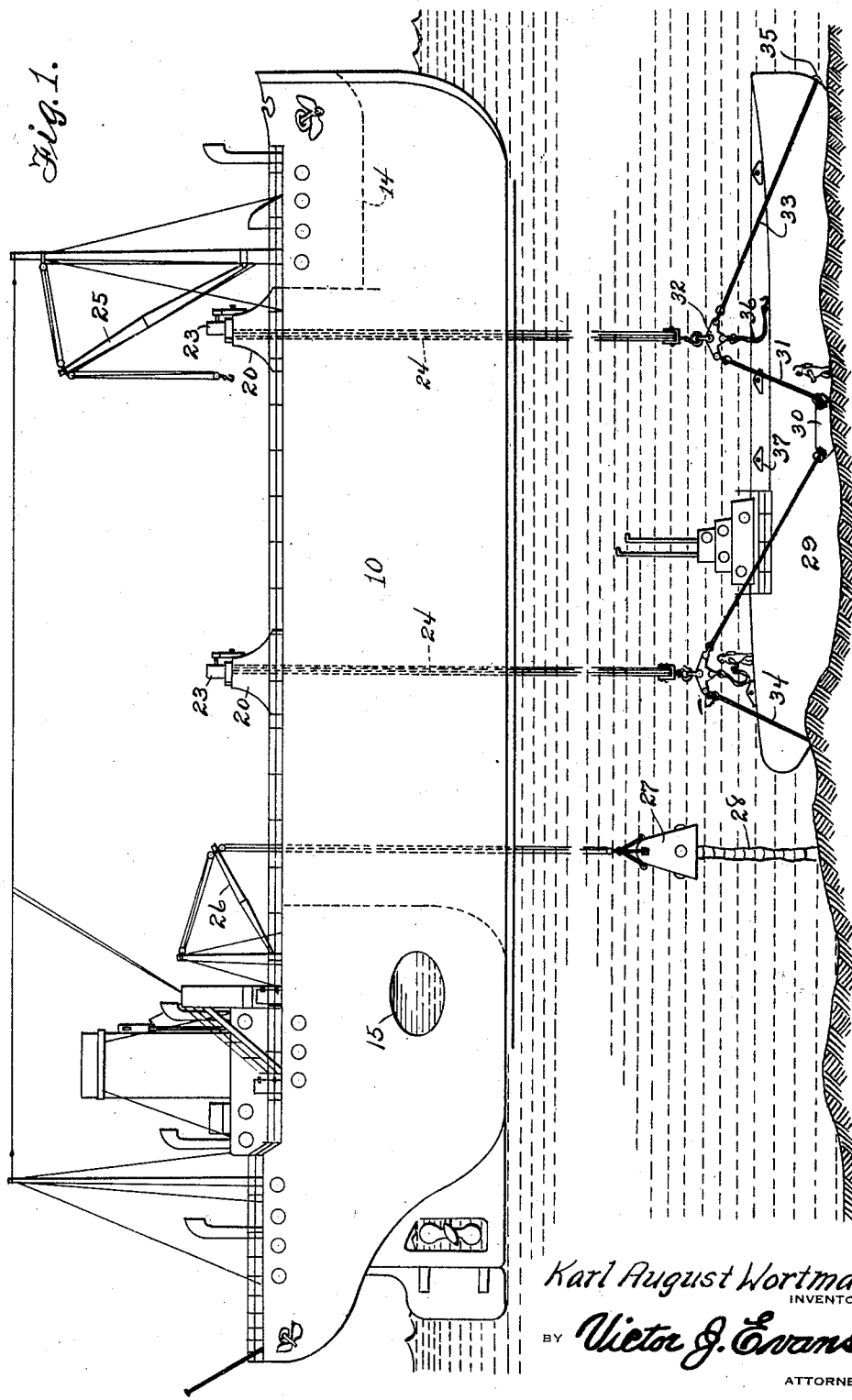
K. A. WORTMANN

1,776,210

SALVAGING SHIP

Filed June 7, 1929

3 Sheets-Sheet 1



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3 Sheets-Sheet 2

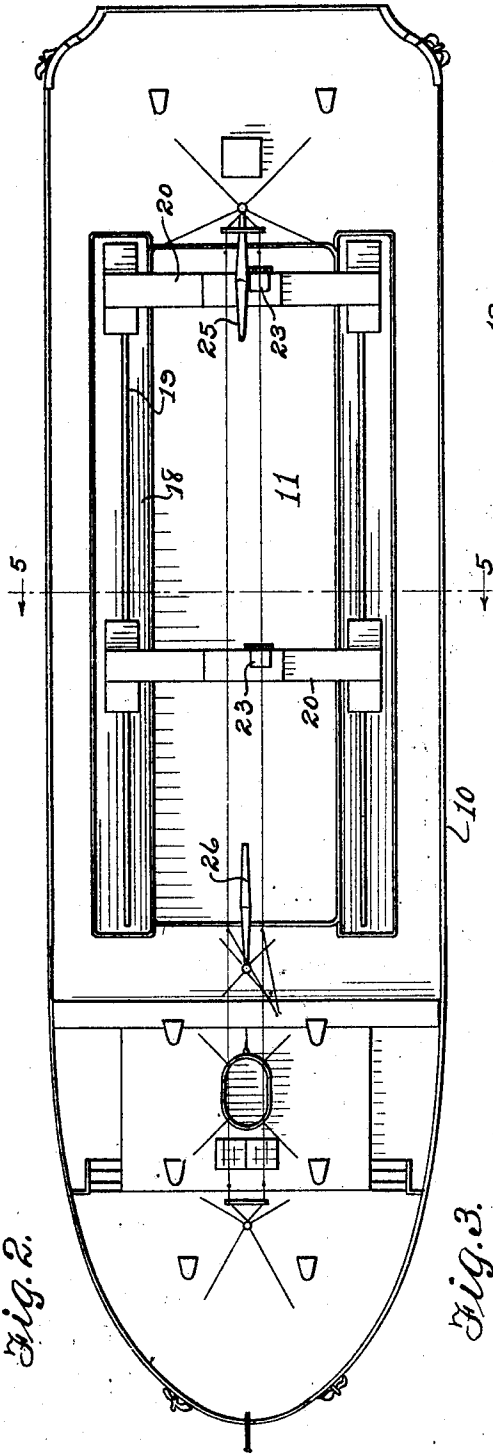
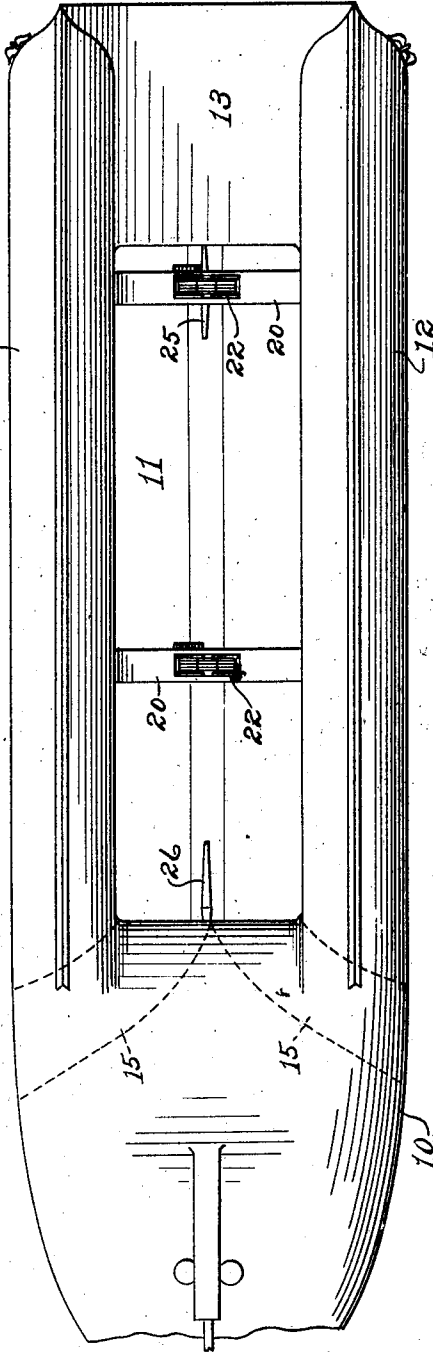


Fig. 3.



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Fig. 6.

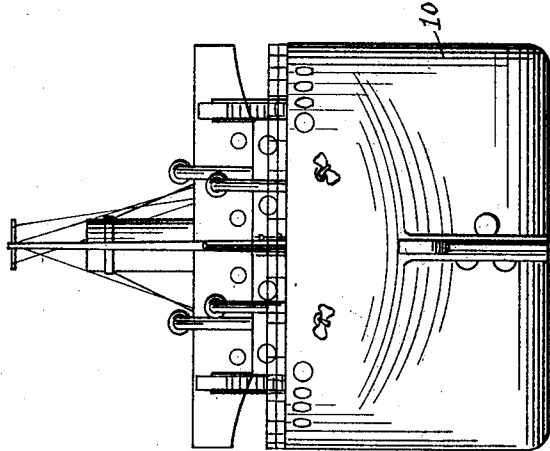


Fig. 5.

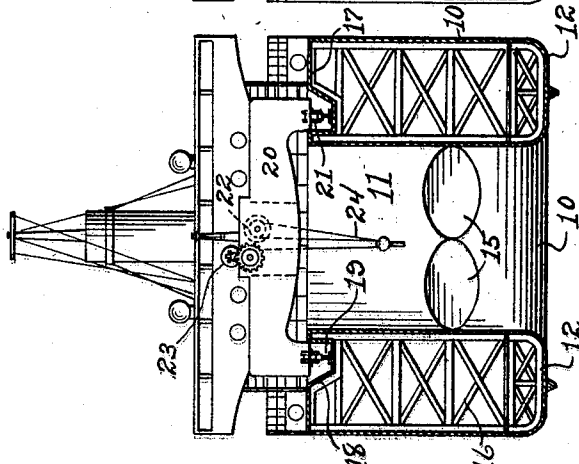
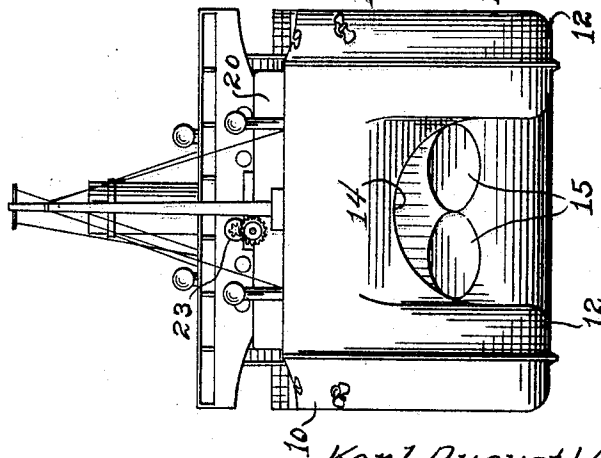


Fig. 4.



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UNITED STATES PATENT OFFICE

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SALVAGING SHIP

Application filed June 7, 1929. Serial No. 369,116.

This invention relates to salvage ships and has for an object the provision of a ship which, while especially designed for raising disabled submarine and other vessels, will be equally useful for raising and salvaging various other submerged objects.

Another object of the invention is the provision of a salvaging ship by means of which a disabled submarine vessel may be raised in a relatively short time, so that the chances of successful rescue of the crew will be materially increased.

Another object of the invention is the provision of a novel form of hull which is especially adapted for raising heavy objects, as the weight of such objects may be distributed evenly throughout the hull so that the latter will remain upon an even keel under the weight of the object being raised.

Another object of the invention is the provision of a hull which while possessing the requisite amount of buoyancy and displacement for raising objects of great weight, may be propelled through the water with a minimum amount of power due to the shape and character of the hull which offers a minimum amount of resistance for a vessel of this type.

With the above and other objects in view, the invention further includes the following novel features and details of construction, to be hereinafter more fully described, illustrated in the accompanying drawings and pointed out in the appended claim.

In the drawings:—

Figure 1 is a side elevation of a salvage ship constructed in accordance with the invention and illustrating the manner of raising a submarine vessel.

Figure 2 is a top view of the ship.

Figure 3 is a bottom plan view.

Figure 4 is a front view.

Figure 5 is a section on the line 5—5 of Figure 2.

Figure 6 is a rear view.

Referring to the drawings in detail wherein like characters of reference denote corresponding parts, the hull of the ship which is indicated at 10 is of sufficient buoyancy and displacement to permit hoisting submarine vessels or other objects of great weight.

This hull is of novel construction being bifurcated for the major portion of its length so as to provide a central longitudinally disposed well 11 and spaced longitudinally disposed pontoons 12 upon opposite sides of the well. These pontoons are connected at the bow and stern of the hull so as to provide a rigid hull structure, and as the character of the vessel requires that the hull be relatively broad, the bow of the hull is provided with a passage 13 which communicates with the well 11. The top of this passage forms an arch 14 which is positioned above the normal water line of the hull, so that when the vessel moves forward, a minimum amount of resistance will be offered. The rear end of the well 11 is in communication with rearwardly and laterally extending passages 15 which extend through the hull, so that water in the passage or well 11 will be provided with a ready outlet through these passages 15.

The pontoons 12 are suitably braced as indicated at 16 and their decks 17 are provided with longitudinally extending trough-like depressions 18 within which are secured rails 19. By reference to Figure 5 of the drawings it will be seen that the rails are disposed longitudinally of the pontoons upon opposite sides of the well 11 and these rails form guides for carriages 20 which are provided with grooved wheels 21 to engage the rails.

Two or more of these carriages are preferably provided and the carriages extend transversely across the well 11 and support windlasses 22 or other hoisting apparatus which may be driven by an electric motor as indicated at 23, or by any other suitable source of power. The windlasses operate block and falls 24 which are adapted to be secured to the object to be raised.

The portion of the hull abaft the well 11 accommodates the boiler and engine, or other motive power of the ship.

The ship may also be provided with derricks 25 and 26 to form additional hoisting apparatus, and the derrick 26 may support a diving bell 27 and a ladder 28 for the accommodation of divers.

In Figure 1 of the drawings the invention is illustrated in connection with a sunken sub-

marine, the latter being indicated at 29. This submarine has attached thereto a saddle 30 and attached to this saddle is a bridle 31 which extends from an equalizing member 32 engaged with the hooks of the block and falls 24. The bridle in addition to being attached to the saddle 30 also extends around the bow and stern of the submarine as shown at 33 and 34 respectively, while a guard or locking device 35 is provided at the bow to prevent slippage.

The saddle 30 is designed to support the majority of the weight of the submarine while the forward and rear portions 33 and 34 of the bridle act to prevent longitudinal movement.

In addition, the equalizers 32 carry cables 36 which may be attached to hooks or bits 37 which are permanently attached to the submarine.

The invention is susceptible of various changes in its form, proportions and minor details of construction and the right is herein reserved to make such changes as properly fall within the scope of the appended claim.

Having described the invention what is claimed is:—

In a salvage ship, a hull bifurcated for a portion of its length to provide spaced longitudinally disposed pontoons connected at their front and rear ends and providing a well with an open passage at the forward end of the well, said hull having outlet passages communicating with the well and extending rearwardly and laterally through the hull, and a hoisting apparatus carried by the hull.

In testimony whereof I affix my signature.
KARL AUGUST WORTMANN.